HABITS OF WISCONSIN PHEASANTS

BY GILBERT GIGSTEAD

The annual taking of 5,000,000 pheasants in the United States, indicates truly that the bird has triumphantly affixed itself to our hunting program. Sportsmen have eagerly accepted the exotic creature, not, to be sure, because of any superior sporting quality in comparison to our native species, but because it meets the modern demand for quick, satisfactory service.

Apparently free from many diseases, immune from severe cyclic disturbances and prolific in captivity, the pheasant can be stocked in almost unlimited numbers. Once established in a locality, it is, unlike our native grouse and quail, difficult to clean out. Should they be destroyed in a given cover, simple methods of restocking will bring them back again in equal numbers within a short time. Conspicuous too, is their hardiness in withstanding severe winter weather. There is no doubt that the pheasant will dominate in territory suitable to them.

Pheasants have been widely planted in Wisconsin. For the past six years extensive releases have been made, and every county has been given at least a seed stock. It can safely be stated that some survive in every county. In the extreme north if planting operations cease, the bird may disappear, but the southern portions will undoubtedly retain fair numbers. During the past years the State Conservation Department distributed annually 30,000 birds and 100,000 eggs to coöperating farmers and sportsmen besides large numbers liberated by shooting preserve operators and other individuals. It is estimated that approximately 250,000 pheasants have been planted in this state.

During the six-day open season at least 200,000 pheasants are added to the hunters' kill, not including the birds taken on private shooting preserves. Despite this heavy toll his oriental cackle is commonly heard from the marshes where formerly the Prairie Chicken sought shelter. Defying civilization, the hardy foreigner has moved into the highly agricultural districts. With brilliant display of feathers he struts boldly across the most traveled highways. Even in the dense cedar swamps and muskeg openings of northern Wisconsin it is not uncommon to have a pheasant bluster out from underfoot.

The farming sections of southeastern Wisconsin, with its many grass and brush marshes interspersed between cultivated fields, offers the most desirable habitat. Here, also is found excellent cover in the

growth of flag and sedges along the shores. Cover of this kind, joined by grain fields, is hard to beat. Good pheasant country is also found in the south-central portions, and for a width of two counties along Lake Michigan as far north as Green Bay. In the hilly western portion conditions for pheasants are less favorable. Here, cover is limited to the river bottoms, and to the brush and grass which grows up along the banks of streams in the valleys.

The northern half of the state, having a limited number of farms and much second-growth timber, has little chance for a heavy population of pheasants. In central Wisconsin it is primarily a matter of maintaining food patches. More than 400,000 acres of this brush land may possibly be established as a game management area and public shooting grounds. Sportsmen in Wisconsin still have hopes that this worthwhile project will materialize.

As the pheasant is primarily dependent upon farming environment, much attention should be given to its relation to the farm and to the farmer. In order to determine this, and be in a position to answer intelligently the question of how much damage the pheasant inflicts upon domestic crops, the Wisconsin Conservation Department investigated numerous complaints and through the coöperation of licensed shooting preserves examined the crop contents of 141 pheasants during a five-month period, from October, 1935 to February, 1936.

Farmers in several localities reported pheasants doing damage to corn fields and vegetable gardens. The writer made many trips afield to trace the direct source of such complaints. In most complaints over damage to corn during the planting season there were found to be other reasons why the corn did not come up. One farmer had planted corn in light loam soil, characteristic of marshlands. During a heavy rainstorm the sprouting corn was exposed by washing. Blackbirds and gophers found it easily accessible. Pheasants did take some: still, there were five gophers to every pheasant. They would fill their cheek pouches, run into their holes and return shortly for more. The farmer had little interest in controlling the gophers and blackbirds which had taken at least 90 per cent of his washed grain.

Another farmer finding a dozen rows of corn dug out near his timber tract, immediately blamed the pheasants. Investigating this early in the morning for three consecutive days, several grey squirrels were observed. Each one would take a row and with rapid digging, would take every kernel of corn planted there. In less than half an hour one squirrel destroyed thirty-two hills of grain. Only once did a cock pheasant visit the same area. It took the pheasant much longer

to dig up just one seed; he would hesitate, and spend considerable time delving in the soil in places where no corn was planted. The phcasant cock was collected, and, upon examination, had three kernels of corn and five grubs in his crop.

Several hundred domestic pigeons were also collected in farm districts, and found with their crops filled with planted grain.

There is no doubt that pheasants will often take planted grains; still, it is questionable whether the damage he does exceeds thc good. In view of all the pests that do so much more damage, is it fair to condemn the pheasant as an enemy of agriculture?

Collecting and examining pheasant crops has resulted in some very interesting findings. Above all, it attests the omnivorous feeding habits, and most of all their erafty methods of procuring subsistance through the tough winter months. No attempt was made to examine the gizzards, as crop contents give a clear picture of just how various feeds were proportioned. Shooting preserve coöperators were askcd to tear out the crop of each bird killed, dry it for a few hours near a fire, and send it in. A great deal more trouble is involved in removing and shipping gizzards. The preserve men tied strings around the skin of the crop and filled out cards explaining when the birds were shot, in what kind of cover, and how far from cultivatcd fields. Eighty-seven per cent of the birds were taken from brush and grass marshes. Others were shot in corn fields, grain stubble, fence rows, and similar places. It appears evident that without the marsh lands, phcasants in Wisconsin would be very scaree. The eombination of grain fields near marsh eover holds as the most popular place for pheasants. Few birds were killed—and probably few oecur—in fields more than half a mile from the marsh. Vast stretches of marsh land surrounded by soil of poor quality carries very few birds. However such places ean usually be changed by planting food patches. Hemp and millets will often prove valuable. It also pays to just plow up patches of such land, and leave it grow up with food bearing weeds which come up when soil is turned.

Field corn was the principal diet of pheasants during the fall and winter months. Even during August waste corn was found in a number of crops. When corn is in the milk stage the birds apparently preferred it to the abundant wceds and insects then available. It must also be remembered that it takes a goodly number of small weed sceds to equal a kernel of corn.

It is estimated that in one day upland game birds consumc the quantity of thcir crop filled twice. The greatest amount of eorn

found in one pheasant crop (moist weight) was 2.2 ounces. Where birds fed exclusively on corn the average crop weighed two ounces. From birds previously examined, together with the 141 crops here reported, it is concluded that about one-third of the pheasants' fall and winter diet in southern Wisconsin, consists of corn.

If then, a farmer had twenty-five pheasants on his property each bird would take one-third of four ounces (two feedings of two ounces each) per day, or 1.3 ounces of corn per day. On this basis it would take approximately sixty pounds of corn to feed twenty-five preasants per month in the wild. Assuming that corn was left in the fields for four months the farmer would invest possibly 240 pounds of corn, or about $3.60 worth, in pheasants. That is figuring the corn at a cent and a half per pound in the field which is usually a very good price.

Now in figuring the benefits of the twenty-five pheasants we have the insect and weed control, either of which might cost the farmer a much heavier loss. In Wisconsin there is a possibility of realizing a direct return through selling hunting privileges under the private shooting preserve law. Permitting the shooting of one-third of the twenty-five birds would net the farmer at least twice the price of 240 pounds of corn.

In some localities farmers find it profitable to plant food patches for game birds. Yellow kaffir corn, or wheatland milo maize has been found to be good for such patches. It should be left standing or placed in bundles along fence rows. Such grains broadcast over the surface, along the outside edges of newly planted corn fields tends to prevent pulling of corn by pheasants or other pests.

Kaffir, planted broadcast is often satisfactory roosting cover when natural grass and marsh are absent from the farm. The Wisconsin Conservation Department last year distributed to farmers and sportsmen seed enough for more than 2,000 patches. Most grains other than corn found in the crops was waste grain left after the threshing or it was taken from the manure spread in the field for fertilizer. The practice of spreading manure over the snow has served as good feeding stations.

As before stated the game birds find feeding conditions most favorable during the early fall months. Grasshoppers appeared in half of the fifty-three crops examined in October, and many of them were eaten as late as the month of November. In the October crops other feed in order of abundance was, common ragweed, yellow foxtail, nightshade bittersweet, and Canada thistle. Yellow foxtail being almost as prevalent as common ragweed. Commonly pheasants' crops

were found packed with Canada thistle seed, as many as 4,000 being taken from one bird. Similar quantities of foxtail and ragweed were counted. Twenty-two grasshoppers was the greatest quantity of insect life found in one crop. Nightshade bittersweet proved to be an excellent fall and winter food and it is well distributed in most of the state. Acorns were taken in less quantity, but the fact that acorns were found in crops at a time when other feeds were abundant indicated that they are not a starvation diet. At the Wisconsin state experimental game farm some pheasants were penned and fed exclusively on acorns while in an adjoining pen the birds were fed strictly on corn. After several months the experiment revealed that the birds fed on acorns weighed more than the birds fed on corn. Otto Beyer, of Portage, Wisconsin, also found acorns a good food and chopped up quantities, feeding it with mixtures of grains to birds in captivity.

The month of November showed the greatest variation of food. Ragweed stood out second in importance to field corn. Begger-ticks and Spanish needles were found packed in the birds' crops without sign of any other material. This was also noted on many other occasions in other years when crops were examined.

Of special significance is the discovery that the pheasant eats an immense amount of poison sumac during December and January. Sumac eating began in November. In December it was nearly as important as corn, and in January more poison sumac was eaten; 32.5 per cent of the contents from twenty-four crops was sumac as compared with 24.1 per cent corn. It is difficult to explain this. There was an abundance of fruit on the sumac last season, and it may be a case of the birds taking what was most easily accessible. Poison sumac is common throughout the southern half of the state; it grows in tamarack marshes which constitute good cover. Fecal observations gave further evidence that both pheasants and quail were feeding much more extensively upon this than upon any other food. Poison ivy, which belongs to the same family, was also eaten during the winter, but not nearly in the same quantity. Poison sumac and poison ivy seeds look very much alike and probably are of similar nutritive value. Perhaps if the ivy had been as available as sumac the birds would have taken more of it. It is believed that thousands of birds were saved from starvation by finding such a great deal of sumac available during the pinch period.

TABLE 1. To show the frequencies and percentages of the various food items used by the Ring-necked Pheasant in Wisconsin. The data were obtained from 141 crops taken during August, October, November, December, and January.

	DOMESTIC FOODS	CROPS TAKEN IN									
		Aug.(4)		Oct.(53)		Nov.(38)		Dec.(22)		Jan.(24)	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Corn (zea maize)	3	62.3	29	25	20	33.8	10	23.3	8	24.1
2	Wheat (Triticum sativum)			1	.5	4	1.2	2	2	1	2
3	Barley (Hordeum vulgare)			3	.4	3	.2	1	3.2		
4	Oats (Avena sativa)	1	26.6	6	2.9	1	.5	1	.2		
5	Buckwheat (Fagopyrum fagopyrum)					1	1				
6	Soy Beans			1	.2						
7	Lima Beans			2	.3						
8	German Millet			1	.6						
9	Amber Cane					1	.3	1	.8		
10	Watermelon Seed									1	2.3
11	Timothy			1	.2						
12	Alfalfa and Clover Leaves (trifolium sp.)			7	1.2						
13	Squash Seed							1	2.6		
	WILD SEEDS, FRUITS, BERRIES										
14	Ragweed (Ambrosia artemisiifolia)			20	14	15	20.4	2	1.8	2	4
15	Yellow Foxtail (Chaetochloa glauca)			15	12.8			1	2.2		
16	Green Foxtail (Chaetochloa viridis)			1	.3	1	.4	1	.4		
17	Impatience (Impatiens biflora)			4	.4	3	2.5	2	4	1	.8
18	Lady's Thumb (Polygonum persicaria)			2	1.4	2	1.8	2	4.1		
19	Begger-tick (Bidens comosa)					2	4.3				
20	Spanish Needle (Bidens bipinnata)					3	3.2	5	14	3	7.4
21	Giant Ragweed			3	1.5	2	3.2			1	2
22	Wild Buckwheat (P. convolvulus)			4	1.1	3	.6	4	4		
23	Smartweed					1	.3			1	1.3
24	Bull Thistle			2	3.7						
25	Canada Thistle					1	.8				
26	Wild Hemp			1	2.5					1	.6
27	Agrimony					1	.4			1	3
28	Burdock					1	.2				
29	Sesame					1	.6				
30	Meadow Rue									1	.4
31	Blue-skull Cap (Scutellaria lateriflora)					1	.2	1	2.5	2	4.3
32	Panicum					1	.2				
33	Compass					1	.2	1	1.2		
34	Lonseed					1	.4				
35	Indian Mallow					1	.2				
36	Rough Avens (Geum virginianum)							1	.7	2	.7
37	Tick Trefoil							1	.2		
38	Scarlet Pimpernel									1	.3
39	Redroot									1	.3
40	Milkweed					1	.8				
41	Clevers Goose Grass Seed							1	.1		
42	Vetch Seed (Panicum capellare)			1	.2			1	.2		
43	Dead Hemp Nettle							1	1.3		
44	Skunk Cabbage (Sumplocarpus foetidus)					2	2.5	2	1.5	1	.6
45	Wild Bean (Strophostyles pauciflora)							1	1.1		
46	Water Plantain							1	.3		
47	Poison Sumac (Rhus vernix)					4	5.6	5	20.2	10	32.5
48	Smooth Sumac					2	1.4			1	.4
49	Poison Ivy (Rhus toxicodendron)							1	.5	1	4.1
50	Dogwood (c. asperifolia)			1	.2	1	1.7	1	.2		
51	Wild Rose					2	1.4			3	4.6
52	Wild Grape			5	3	1	2				
53	Nightshade Bittersweet			5	4.2	3	2			1	1
54	Hazel Nut					1	1.2				
55	Hills Oak Acorns			1	1.7	1	1.7	2	2.4	1	3.3
56	Wild Cherry Pits					2	.5	2	.5		
57	Grasshoppers	1	10.1	26	16.7	6	5.4				
58	Beetles (Coleoptera) and Larvae			3	.4	3	.6				
59	Lepidoptera larvae			1	.2						
60	Ants			2	.2						
61	Snails					1	.7				
62	Grass Blades and Organic Debris	1	.1	7	.6	1	.7	1	.3		

Poison sumae and ivy, eorn, ragweed, Spanish needle, wild rose hips, skunk eabbage, and blue skull cap were also important feeds during January, and undoubtedly eontinued to be of importanee throughout the winter.

In some localities where giant ragweed was abundant, there were indications of pheasants feeding upon it. More than thirty varieties of weed seed were found in the 141 crops examined, and sixty other foods including domestic grains.

In general, it ean be concluded that the pheasants, with their versatile feeding habits, their importance in helping to control noxious weeds and inseets, as well as their sporting value are worthy of continued eneouragement by the hunters and farmers.

Havana, Ill.

SOME COLD-WEATHER BIRDS OF THE UPPER PENINSULA OF MICHIGAN

BY RALPH BEEBE

The Upper Peninsula of Michigan was acquired by the state in lieu of the disputed strip of land upon which is now located the city of Toledo. Ohio, much to the disgust of thc citizens of the state at the time. Since that time it has become a rieh mining area, its vast forests have passed through the lumbering boom days with their sueeessive forest fire and seeond growth timber stages, its supposedly roekpile and iceburg surfaee has given way to fertile farms. Thousands of tourists, hunters, and fishermen travel over well surfaeed roads or thread barely discernible trails through the wilderness.

It has an abundant of varied fauna, little known until recent years and there is still great opportunity for study. In presenting this artiele the writer does not attempt to present a eomplete list or to name all speeies personally observed but to make notes of some of the more interesting speeies. The following notes refer to the vicinity of Newberry, Luee County, Michigan.

Eastern Goshawk. *Astur atricapillus atricapillus.* Often abundant during the fall migration and some may be found at all seasons.

Canada Spruce Grouse. *Canachites canadensis canace.* Formerly quite eommon but now found only in the deeper forests if at all.

Canada Ruffed Grouse. *Bonasa umbellus togata.* Probably as abundant now as at any time in the past.